

USSN.: 09/863,379
Examiner: Massarotto Luigi
Group A.U.: 1732
May 21, 2004

REMARKS

The Examiner's comments and objections and the cited references have been carefully considered by the Applicant.

Claim 1 was amended to improve the clarity of the formulation. It will be noted that the wording "a mixture of remaining for obtaining the expandable plastic material" was changed to read "

"a mixture of remaining components for obtaining the expandable plastic material" so as to correct a transcription error.

Thereby, "said remaining components" on the next-to-last line of claim 1 has an antecedent basis.

Moreover, a clarifying amendment was made to indicate "said mixture being formed" instead of "said mixture being provided". This amendment is clearly supported by the original specification. e.g. on page 6, lines 4 and 5, page 8, first paragraph, page 9, lines 26-28 and the drawings.

Moreover, new claim 15 is submitted based on a combination of original claims 1 and 6, and original description page 6, lines 4-5, and new claim 16 is submitted corresponding to original claim 6 rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph set forth in the Office action and to include all of the limitations of the base claim and any intervening claims.

The Examiner's objection based on Friedrichs et al and Schulte et al. have been attentively considered and it appears that a correctly interpreted claim 1, considering the clarifying language introduced by the amendments, is not rendered obvious by the combination of the cited documents.

It should be particularly noted that:

USSN.: 09/863,379
 Examiner: Massarotto Luigi
 Group A.U.: 1732
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1. Claim 1 requests that the at least one component and the mixture of remaining components for obtaining the expandable plastic material be introduced at high pressure in the pouring channel.

It should be also noted that it is immediately evident for the skilled person in the field of the polyurethane production technology, that operating at high pressures means operating at pressures in the range from 50 and 250 bar, and anyway higher than 50 bar.

Friedrichs et al. '053 never shows such high pressure introduction for both one component and the mixture of remaining components.

Friedrichs et al. '053 only shows the introduction of one component, isocyanate, at a pressure from 50 to 250 bar into the polyol component containing filling material, the polyol component being at a pressure from 0.2 to 2 bar (col. 3, first paragraph and claim 2).

2. It should be furthermore noted that claim 1 requests that the mixture of remaining components be formed downstream of the high pressure pump.

Friedrichs et al. '053 shows adding the filling material to the polyol downstream of the metering pump 54 and upstream of the screw pump 57.

About the metering pump 54, Friedrichs et al. '053 shows on column 3, lines 38-40, that "Suitable metering pumps are screw pumps which are operated in the low-pressure range to an internal pump pressure of 20 bar, i.e. in the speed range of from 300 to 500 rpm" (emphasis added).

The skilled person reading the patent to Friedrichs et al. '053 in no way would interpret the disclosures therein as meaning that the mixture of remaining components is formed downstream of a high pressure pump.

3. It should be moreover noted that claim 1 requests that during the pouring step hold step said remaining components of the mixture are individually placed in the recirculation step. The claim formulation clearly indicates that each of the

USSN.: 09/863,379
 Examiner: Massarotto Luigi
 Group A.U.: 1732
 May 21, 2004

components of the mixture, as e.g. each of the polyol, the blowing agent and the catalyst, are subjected to recirculation during the pouring step hold.

Friedrichs et al. '053 only shows (column 4, lines 63-67, column 5, lines 1-2) the action of sealing piston 20 which connects inlets 11 and 12 individually with *"recirculation, pipes 24 and 25 via which the polyol containing filling material and the isocyanate, are fed back to their respective storage container."*

In no way can it be said that Friedrichs et al. '053 teaches the remaining components of the mixture **individually placed in the recirculation step**, as it is instead requested by claim 1.

Moreover, any indication of a recycling step in Friedrichs et al. '053 is directed only to discontinuous processes and not to continuous processes. The same applies for Shulte et al. disclosing, on column 3, lines 44-47 mixing heads, that *"in principle"* permit continuous operation but only disclose, on column 4, lines 24-30, feeding back to their storage containers the isocyanate and the high-viscosity polyol thereby the recirculating stream is maintained during breaks between batches, and on column 4, lines 63-67 discloses *"recirculation of the isocyanate at the end of the batch"*, i.e. in a discontinuous process.

It should be noted that the claimed continuous method avoids problems related to the composition of the product at the beginning of the production thereof, allowing to obtain as from the beginning of the production products with specific technical characteristics. In the methods implying introduction and mixing of further components to a reaction component at low pressure and upstream of the high-pressure metering pump the products obtained just after the components are changed during the operation of the apparatus do not correspond to specific required parameters.

Moreover, the applicants note that:

The criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success,

USSN.: 09/863,379
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May 21, 2004

viewed in the light of the prior art... Both the suggestion and the expectation of success must be found in the prior art, not in the applicant's disclosure.

In re Dow Chemical, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988)

Here, objective suggestion in the cited art to modify Friedrichs et al. '053 method as required by the claims was not identified in the prior art. For this reason alone, the rejection should be withdrawn. Friedrichs et al. '053 do not teach nor suggest at least one component **and** the mixture of remaining components for obtaining the expandable plastic material be introduced at high pressure in the pouring channel, the mixture of remaining components be formed **downstream of the high pressure pump**, and that during the pouring step hold step said remaining components of the mixture are **individually** placed in the recirculation step.

There is no motivation to modify in this manner the method of Friedrichs et al. '053.

In view of the above, the Applicants request that the Examiner withdraw the rejection of claims 1-5 and 7-9 under section 103(a).

In view of the foregoing, favorable action on the merits, including entry and approval of all amendments, reconsideration and withdrawal of each rejection and allowance of all claims is respectfully solicited.

Respectfully submitted,



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